

Affordable Housing Healthy Material Specification

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The following table lists healthy material recommendations for affordable housing in consideration of ESDS and Enterprise requirements.

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Legend: (habitablefuture.org/our-solutions/product-guidance/)

Best in Class

Better

Good

Reduce

Eliminate

Worst in Class

Preferred; fewer chemicals of concern or less hazardous chemicals throughout the product lifecycle.

Can use but still opportunities for improvement.

Phase out or reduce amount used.

Avoid; most chemicals of concern or chemicals with the highest hazards used throughout the product lifecycle.

CSI Division	Material	Chemical(s) of Concern	Cost Impact	Recommendations	Product Name*	Products meet Enterprise Green Communities Criteria 6.4	ESDS v4.0		Color rankings from Habitable Informed Product Guidance - For Recommendations
							6.01a Mandatory	6.01b Optional	
06 00 00 Composites	Composite wood	Formaldehyde causes cancer, eye, nose, and throat irritation, and difficulty breathing.	\$	Specify "No Added Formaldehyde" (NAF) products.	<ul style="list-style-type: none">NAF productsSeal w/ AFM Safe Seal Plywood/OSB sealer	✓	Formaldehyde - comply w/ CARB Ph2 and/or TSCA Title IV	Only use NAF or Ultra low Emitting Formaldehyde (ULEF)	No Added Formaldehyde (NAF)
07 13 00 Sheet Waterproofing	Thermoplastic Membrane Roofing	PVC production and disposal create known human carcinogens; PVC may contain hormone-disrupting plasticizers (phthalates).	\$\$	Specify TPO or EPDM membrane roofing.	<ul style="list-style-type: none">GAF Everguard Extreme TPO, Everguard TPOCarlisle/Versico-Syntec Sure-Weld Fleeceback, Sure-Weld TPO, EPDM roofing	Phthalates are listed as a chemical of concern.			TPO Membrane Roofing
									EPDM Membrane Roofing
07 21 00 Thermal Insulation	Batt insulation	Formaldehyde causes cancer, eye, nose, and throat irritation, and difficulty breathing.	\$	Choose fiberglass batt insulation; if using mineral wool batt insulation, specify "formaldehyde-free".	<ul style="list-style-type: none">Knauf Ecobatt, Glass Mineral Wool productsOwens Corning Thermafiber FF Mineral Wool productsRockwool AFB EVO, Stone Wool products	✓			Unfaced fiberglass, sheep's wool, wood fiber, and formaldehyde-free mineral wool
									Cotton batts, cellulose batts, kraft-faced fiberglass
	Rigid board insulation	Halogenated flame retardants (HFRs) are persistent, bioaccumulative, and toxic.	\$	Specify products with no halogenated flame retardants (HFRs).	<ul style="list-style-type: none">GAF Energyguard NH Barrier Polyiso InsulationRockwool Stone WoolCarlisle/Versico-Syntec SecurShield NH, SecurShield HD NH, SecurShield HD Plus NH, SecurShield HD Composite NH	✓	No halogenated flame retardants (HFRs)		Expanded cork board
									Wood fiber board, unfaced formaldehyde-free fiberglass board, unfaced formaldehyde-free mineral wool board
									Halogen-free polyisocyanurate board, standard unfaced mineral wool board, standard unfaced fiberglass board

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07 21 00 Thermal Insulation	Acoustic insulation	Formaldehyde causes cancer, eye, nose, and throat irritation, and difficulty breathing.	\$	Specify unfaced formaldehyde-free products.	<ul style="list-style-type: none"> Knauf Unfaced Duct Wrap, Acoustical Board Smooth, Black Acoustical Board Owens Corning Pink Next Gen Fiberglass 	✓			Unfaced fiberglass batts, unfaced formaldehyde-free fiberglass boards
	Blown-in insulation	Blown-in insulations are generally good options from a material health perspective. They typically avoid the chemicals of highest concern in insulation: formaldehyde, HFRs, and isocyanates.	\$	Specify blown-in wood fiber, blown sheep's wool, blown fiberglass, blown mineral wool, or loose fill cellulose.	<ul style="list-style-type: none"> Knauf Jetspray, Supafil, Supafil Party Wall Owens Corning Atticat, Propink, L77, Procat, Propink Multispec Havelock Wool Insulation 	✓			Blown-in wood fiber Blown sheep's wool, blown fiberglass, blown mineral wool, loose fill cellulose Dense pack or spray applied cellulose
	Foamed-In-Place insulation	Halogenated flame retardants (HFRs) are persistent, bio-accumulative, and toxic. Isocyanates are asthmagens.	\$	Do not use polyurethane spray foam insulation.			Comply with California Department of Public Health Standard. UL GreenGuard Gold. No HFC blowing agents.	No spray foam insulation in any large area application including attic/roof, wall cavity, or flush-and-batt; may be used for small area applications OR do not use.	Spray foam is ranked worst-in-class for insulation materials. Choose preferred, non-foamed in place insulation materials such as batt, blown, or board.
07 46 00 Wall Panels	Exterior siding	Crystalline silica generated during on-site cutting causes cancer.	\$\$	Specify siding with no crystalline silica like wood or metal siding.	<ul style="list-style-type: none"> AEP Span with Zincolume plus coating Centria Intercept HLZ Modular metal panel system Metal Sales Fluoropon Pure coated Aluminum Panels Thermally modified siding (Cambia, Kebony, Luna) FSC-certified wood siding 				Expanded cork board
									Anodized aluminum siding/cladding, wood siding
									Brick veneer, fiber cement siding
									Polypropylene (polymeric) siding
									Fluoropolymer-coated aluminum/steel, phenolic panels
									Vinyl/polyvinyl chloride (PVC) siding

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07 27 27 Vapor Permeable Barrier		VOCs have a variety of health effects including headaches, nausea, eye, nose, and throat irritation, organ damage, and cancer. HFRs are persistent, bio-accumulative, and toxic.	\$	Specify products with no HFRs and VOC limits per SCAQMD Rule 1168.	<ul style="list-style-type: none"> Vaproshield Wrapshield SA Self-Adhered System 		VOC content less than or equal to the thresholds provided by the SCAQMD Rule 1168.	Comply with California Department of Public Health Standard.	Currently no red-to-green ranking for this category.
07 90 00 Adhesive and Sealants	Sealants (indoor use)	Phthalates (orthophthalates) disrupt hormones. Isocyanates cause asthma. Cyclosiloxanes disrupt hormones. VOCs have a variety of health effects including headaches, nausea, eye, nose, and throat irritation, organ damage, and cancer.	\$	For caulk-type sealants, specify pre-compressed polyurethane joint seal, phthalate-free acrylic and latex sealants.		✓	VOC content less than or equal to the thresholds provided by the SCAQMD Rule 1168.	Comply with California Department of Public Health Standard. No orthophthalate plasticizers.	Pre-compressed polyurethane joint seal
									Acrylic and latex sealants, siliconized latex, acoustical sealants
									Butyl sealant
									Single-component silicone sealant, single-component polyurethane foam, hybrid/modified polymer
									Mildew resistant/sanitary silicone, single-component polyurethane, two-component polyurethane
09 93 00 Sealers	Sealers (outdoor use)	Polycyclic Aromatic Hydrocarbons (PAHs) cause cancer as well as heart defects, immune suppression, reduced growth, and reproductive effects.	\$	Do not use coal tar driveway and parking lot sealers.					Currently no red-to-green ranking for this category.
08 00 00 Openings	Windows and doors	PVC production and disposal create known human carcinogens and PVC may contain hormone-disrupting plasticizers (phthalates).	\$\$	Specify non-vinyl windows and doors.	<ul style="list-style-type: none"> Fiberglass, aluminum windows and doors. 	Phthalates are listed as a chemical of concern.			Anodized aluminum
									Wood, aluminum-clad wood, fiberglass
									Insulated fiberglass
									Fluoropolymer-coated aluminum, PVC clad wood, wood plastic composite, vinyl
									Insulated vinyl window

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09 65 16 Resilient Sheet 09 65 19 Flooring Resilient Tile Flooring	Flooring	PVC production and disposal create known human carcinogens and PVC may contain hormone-disrupting plasticizers (phthalates).	\$	Specify non-vinyl flooring.	<ul style="list-style-type: none"> Forbo Marmoleum Shaw Contract Mineral Floor, Bio-Based Resilient products Interface Nora Armstrong Migration, Striations, Diamond 10 Mohawk Group True Collection Tarkett Lino XF2 	✓	Comply with California Department of Public Health Standard. CRI-Green Label Plus.	No vinyl flooring. All flooring assembly are Red List-free.	Linoleum
									Pre-finished cork flooring
									PVC-free resilient flooring (this category covers PVC-free resilient flooring that isn't linoleum, rubber, polyurethane, or cork flooring), pre-engineered pre-finished wood flooring.
									Polyurethane PU resilient flooring, rubber flooring without tire-derived crumb rubber
									Vinyl flooring (no phthalates or hazardous recycled content), ceramic tile (with added lead), concrete (with sealers or with densifiers/coatings containing PFAs)
									Rubber flooring with tire-derived crumb rubber
09 68 00 Carpet	Carpet	PVC production and disposal create known human carcinogens and PVC may contain hormone-disrupting plasticizers (phthalates).	\$	Specify products that are PFAs-free and do not use vinyl or PU backing or fly ash. Specify no added antimicrobial agents.	<ul style="list-style-type: none"> Interface, Shaw, Milliken, Mannington, Mohawk, Tarkett 	✓	No carpet within 3 feet of building entrance. No carpet on slab-on-grade.	No carpet.	Carpet (with no fly ash, non vinyl or polyurethane backing, and no PFAs)
09 72 00 Wall coverings		PVC production and disposal create known human carcinogens and PVC may contain hormone-disrupting plasticizers (phthalates). VOCs have a variety of health effects including headache, nausea, eye, nose, and throat irritation, organ damage, and cancer. Phthalates (orthophthalates) disrupt hormones.	\$	Specify non-vinyl and choose wall coverings low in volatile organic compounds (VOCs).		✓	Phthalate-free and vinyl free.		Currently no red-to-green ranking for this category.

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09 90 00 Paint	Interior standard water-based paints	APEs (alkylphenol ethoxylates) are hormone disruptors. VOCs have a variety of health effects including headache, nausea, eye nose, and throat irritation, organ damage, and cancer.	\$\$	Specify APE-free, low-VOC content/emission, no PFAs paints. Specify no added antimicrobial agents.	<ul style="list-style-type: none"> Benjamin Moore Ultra Spec 500 	✓	Comply with California Department of Public Health Standard. UL GreenGuard Gold.	APE-free.	GS-11 Certified, very low VOC content, and low VOC emissions
									APE-free, low VOC content, and low VOC emissions
09 96 00 High-performance coatings		Isocyanates are asthmagens. Bisphenols are hormone disruptors.	\$	Specify epoxy-free and isocyanate-free products.	<ul style="list-style-type: none"> Carboline Firefilm IV, Thermo-Sorb 263, Carbothane 133 MC, Carbocoat 115 VOC, Carbocrylic 3359 DTMC Fireshield Steel 1001 and 1002 Protegia AB Steel 1001, 1002, Wood-S, Topcoat W Benjamin Moore Ultra Spec HP Acrylic Metla, Primer HPO4 Linetec Anodized Aluminum Sherwin Williams Fluoropon Pure PVDF Coil/Extrusion Coating, Polyester Pure Decking Coil Coating 				Currently no red-to-green ranking for this category.
12 20 00 Window Treatments	Roller Shades	PVC production and disposal create known human carcinogens and PVC may contain hormone-disrupting plasticizers (phthalates).	\$\$	Specify phthalate-free and non-vinyl products.	<ul style="list-style-type: none"> SWF Contract Classics, Customiser Louvershade Dual Zone Mecho Ecoveil, Urbanshade Mermet Avila, Green-screen Evolve, Nature, Revive, Verona Daylight Vizela 	Phthalates are listed as chemicals of concern.			Currently no red-to-green ranking for this category.

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12 30 00 Casework	Doors and cabinets	Formaldehyde causes cancer, eye, nose and throat irritation, and difficulty breathing.	\$	Specify solid wood or no-added formaldehyde composite, and opt for a plywood over other composite wood where possible.	<ul style="list-style-type: none"> Columbia Forest Products PureBond NAF Roseburg Medex, Medite II, Arreis 	✓	Formaldehyde - comply with CARB Ph2 and/or TSCA Title IV.	Only use "No Added Formaldehyde" (NAF) or Ultra-Low Emitting Formaldehyde (ULEF).	Solid wood
									Plywood NAF ("No Added Formaldehyde")
									Plywood (Standard, ULEF), particleboard or MDF (NAF)
									Particleboard or MDF (Standard, ULEF)
12 36 00 Countertops	Countertops	Laminate countertops may contain formaldehyde, a known human carcinogen; stone countertops may be sealed with PFAs, which can suppress the immune system, raise cholesterol, and cause cancer.	\$	Specify mineral or stone-based countertops that do not need to be sealed after installation, such as porcelain slabs, quartz, or some natural stone. Avoid laminate and plastic countertops including cultured marble and solid surface. Specify no added antimicrobial agents.	<ul style="list-style-type: none"> Quartz Surfaces from Cambria, Dupont, Architectural Surfaces, United Materials, Caesarstone, Daltile, Wilsonart 				Unsealed natural stone
									Porcelain slabs (no added lead)
									Quartz, ceramic tiles (no added lead, no PFAs sealer)
									Cultured marble, solid surface, plastic laminate
									Sealed natural stone
									Porcelain slabs/ceramic tiles (with added lead and/or PFAs sealer)

Additional Resources

Toxic-Free Future - Toxic Chemicals in Building Materials
 International Living Future Institute - Comprehensive Red List Free Affordable Housing Material List
 International Living Future Institute - Red List Chemicals
 Habitable | Informed Product Guidance
 Little Things Matter: The Impact of Toxins on the Developing Brain
 Enterprise | Green Communities Criteria & Certification - Materials
 The Evergreen Sustainable Development Standard ESDS

toxicfreefuture.org/key-project/toxic-chemicals-in-building-materials/
livingfuture.org/affordable-housing/
livingfuture.org/red-list/
habitablefuture.org/our-solutions/product-guidance
youtube.com/watch?v=E6KoMAbz1Bw
greencommunitiesonline.org/materials#sec_254
commerce.wa.gov/building-infrastructure/housing/housing-trust-fund/housing-trust-fund-evergreen-sustainable-development/

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